

Abstract

An infrared light condensing apparatus is provided that permits an infrared light of several tens microns in wavelength to be focused efficiently at a microfine area of submicron or less and also a near-field from a microfine area of submicron or less to be taken out efficiently and at the same time permits a scanning image to be obtained. It includes a solid immersion lens (2) made of a medium of high index of refraction for coupling an incident light (8) or an outgoing light (9) to an antenna efficiently, a measured specimen (6) disposed on a base plane (3) of the solid immersion lens (2), the antenna (4), e. g., a planar dipole antenna (14) or a planar slot antenna (16), that is disposed away from the base plane (3) at a distance that is $1/4$ of an effective wavelength of the light for causing the light to geometrically resonate therewith, a probe (4b) in the form of a rod-like conductor having a sharply point end projecting from the antenna (4), and a position control means such as a triaxial XYZ mechanical stage (23) for controlling the position of the probe (4b) with the intermediary of a cantilever (5). Coupling the incident light (8) or the outgoing light (9) to the antenna (4) is made through the high dielectric constant medium side and an antenna capable of bringing about geometrical resonance is used to enhance the efficiency.